Visitor Transportation at U.S. National Parks

Increasing Accessibility but Preserving the Environment

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Visitors to some of the most popular U.S. National Parks encountered new travel options this past summer, such as propane-fueled shuttle buses to hiking trails from parking facilities and visitors centers. The alternative transportation systems—the coordinated efforts of federal agencies, state governments, local communities, businesses, and other groups—addressed the problems of traffic congestion on local and park roads and enhanced the park experience for record numbers of visitors.

Providing ease of access to and within U.S. scenic parks has been a concern since Yellowstone became the first national park in 1872. Horses, railroads, automobiles, buses, trolleys, seaplanes, and bicycles are some of the modes visitors have used over the years.

Tourists seeking scenic views in U.S. national parks use a variety of modes, such as this boat in the Florida Everglades.

But transportation presents difficulties for the National Park Service (NPS), which must preserve and protect the natural features of the parks for future generations and yet provide enjoyment for people today. New, coordinated intermodal approaches using the latest technologies are helping to meet this challenge.

Adventures and Memories

The sentiment of a 1934 postcard, "National parks: the adventures of today are the memories of tomorrow," still applies to visitors 66 years later. National parks and public lands are natural and cultural resources, providing enjoyment and recreational opportunities to visitors from every state and from around the world. The national parks are America's crown jewels.

But the national parks also are an economic engine driving the U.S. travel and tourism industry. As a result, federal and state agencies, gateway communities, environmental groups, tour operators, and local businesses, as well as visitors, have active interests in the national parks. Managing scarce resources with ever-increasing numbers of visitors yet limited funding is an ongoing concern.

Transportation is a key issue. The transportation system to, from, and within national parks and public lands influences not only visitors' travel experiences but also the fragile environment. Groups that depend on visitors for their livelihood have a keen interest in park transportation systems. Meeting the transportation needs of visitors requires innovative intermodal approaches, as well as the coordinated efforts of all interested groups.

Getting There

The visionaries who convinced Congress to establish Yellowstone National Park in 1872 would be surprised

at the scope and scale of the park system today. NPS now oversees 379 parks, monuments, reserves, battlefields, historic sites, parkways, recreation areas, and other properties, encompassing 18 million acres. The national parks include 8,055 miles of roadways and parkways, 1,252 bridges, and 60 tunnels, plus parking facilities at every site.

The transportation systems serving the parks have evolved. Horses provided the first means of access to national parks, and the U.S. Cavalry built the early roadways in Yellowstone National Park. Railroads next played a major role, opening many of the western parks to visitors. In addition to providing access, the railroad industry constructed hotels, visitors centers, and local roads to accommodate travelers. Railroads also placed newspaper and magazine advertisements to promote travel to the parks, attracting visitors who had the time and financial resources for long vacations.

The automobile soon replaced railroads as the nation's major mode of transportation, and the interstate highway system facilitated automobile travel. The Baby Boom generation, growing up on the scenic

Railroads played a major role at the start of the 20th century in opening many of the western parks—like Glacier National Park—to visitors.

views in *Walt Disney's Wonderful World of Color* and advertising slogans like "See the U.S.A. in your Chevrolet," took to the freeways and the byways in record numbers, with national parks, recreation areas, and other public lands as primary destinations.

"Lying Lightly on the Land"

The automobile has had a significant influence on national parks, providing individuals, families, and groups with access to remote areas, flexibility in route selection and in time of travel, and storage for recreational equipment. These features, however, make the management of travel in the parks difficult.

Park roadways, first installed in the 1920s and 1930s, were designed for leisurely travel that respected the environment. The Civilian Conservation Corps of the Depression-era Works Progress Administration constructed roads in many parks; wealthy individuals built others on land they later donated to the park system. Following the principle of "lying lightly on the land," these roadways were not designed for a high volume of vehicles.

In recent years, NPS has added visitor transportation systems to 50 parks, offering a range of modes, such as vans, bus fleets, historic trolleys, and seaplanes. Most of these serve as alternatives to automobile travel or provide opportunities to view otherwise inaccessible park areas.

Addressing the Issues

The numbers of visitors at national parks have increased significantly in the past 50 years, exceeding 266 million in 1998. Interest in the parks continues to increase. The popular media and scholarly publications alike have documented the problems: congested access roads, bumper-to-bumper travel within parks, overcrowded parking lots, degradation of wildlife, overuse of environmentally sensitive areas, lack of adequate infrastructure, and aging buildings and facilities.

Because a multitude of federal and state agencies, local communities, private businesses, environmental groups, and other organizations have an interest in the national parks, addressing the transportation issues is not easy. Park areas significantly influence the economic health and vitality of gateway communities, private businesses serving travelers, and related industries. Each year, for example,

- Visitors to Yellowstone National Park spend $725 million in adjacent communities,
- Birdwatchers in the National Wildlife Refuge along the Texas Gulf coast infuse $14 million into the local economy of McAllen,
- The Blue Ridge Parkway contributes $1.3 billion to local communities along the 469-mile route that runs between southern Virginia and North Carolina, and
- Wildlife-related tourism generates an estimated $60 billion a year nationwide.

New Directions

From the U.S. Cavalry's early roads in Yellowstone National Park, to the railroads that expanded access to the western parks, to current efforts to employ transit systems and advanced technologies, transportation has been a critical element in park management and in the experiences of park visitors. The Intermodal Sur-

face Transportation Efficiency Act (ISTEA) of 1991, the Transportation Equity Act for the 21st Century (TEA-21), recent Presidential directives, and interagency agreements have established new directions for transportation services at national parks.

Requirements and funding provisions in ISTEA have produced alternative transportation studies at several of the parks. The act also included new programs and categories for enhancement projects, scenic byways, parkways, and roadways in parks and other federal lands. TEA-21 continued these provisions and included additional funding in many categories.

Interagency Cooperation

A 1996 Presidential memorandum required the secretaries of the Department of Transportation and the Department of the Interior to develop a plan to improve public transportation in the national parks. The secretaries drafted a memorandum of understanding in 1997, recognizing the mission and responsibilities of each agency, and establishing the goal of planning and developing comprehensive, intermodal, and cost-efficient transportation systems to conserve national resources and to provide visitors with pleasant and enjoyable experiences.

Since 1997, the two agencies have worked cooperatively on the following five general activities:

- Developing and implementing innovative transportation plans;
- Exchanging personnel and sharing information;
- Developing and implementing transportation improvement initiatives through interagency project agreements;
- Developing innovative transportation planning tools; and
- Developing innovative policy, guidance, and coordination to implement safe and efficient transportation systems. These systems must be compatible with the goal of protecting and preserving the cultural and natural resources of the national parks.

The secretaries of the Department of the Interior and the Department of Energy signed their own memorandum of understanding in 1999, establishing the Green Energy Parks program to promote the use of renewable and energy-efficient technologies and practices in the national parks.

Federal Agency Efforts

Many efforts are under way in national parks and other public lands as a result of these initiatives. For example,

- The Federal Highway Administration has stationed a planner at Yosemite National Park for the past two years;
- Demonstration projects have begun at five parks: Acadia, Zion, Grand Canyon, Golden Gate, and Yosemite;
- Alternative-fueled buses and shuttle vehicles are operating at some parks;

Shuttles operate along Cape Cod National Seashore, Massachusetts.

- The Bicycle Federation of America and the Surface Transportation Policy Project have assisted in regional training sessions for staff of both agencies; and
- An intelligent transportation system (ITS) is undergoing testing at Acadia National Park.

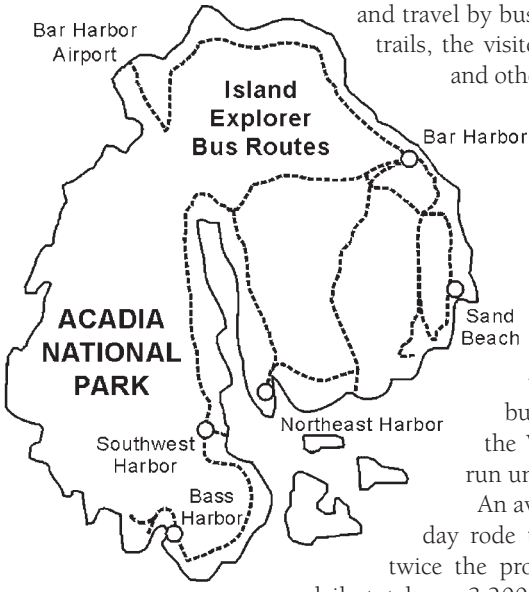
Sample Initiatives

Island Hopping

Acadia National Park comprises 40,000 acres along the coast of Maine, Mount Desert Island, and other islands. Established as a national monument in 1916 and granted park status in 1929, Acadia is one of the system's older parks. Much of the park's land was donated by private citizens, and private individuals and groups also built much of the infrastructure—including 44 miles of carriage roads constructed under the direction of John D. Rockefeller. These roads, parking lots, and other facilities cannot accommodate the ever-increasing numbers of visitors and vehicles.

NPS, the Maine Department of Transportation, regional organizations, local communities, local businesses, and other groups have adopted a coordinated approach to the problems. A general management planning process, initiated in 1987, produced an agreement to pursue an areawide transportation system. A new bus system was a major element of the plan.

The first two years of the Island Explorer transit system have proved that the approach can work. Since summer 1999, eight propane-fueled buses have operated on six routes, linking hotels and other businesses with main park destinations. The popularity of the service led to the addition of a seventh route and nine more buses in 2000. The system allows visitors to leave their vehicles outside the park



and travel by bus for free to hiking and biking trails, the visitors center, the ferry terminal, and other sites within the park or simply to enjoy the bus ride through the park.

The Island Explorer operates during the busiest part of the summer, from June 23 to September 4. Schedules vary by route, with operations starting between 7:30 and 8:30 a.m. Service continues until the early evening, but buses on the route linking the Village Green and area hotels run until 11:00 p.m.

An average of 2,000 passengers per day rode the Island Explorer in 1999, twice the projected estimate. The highest daily total was 3,200 passengers, and many weekends attracted 2,500 daily riders. This season's totals should top the 142,000 passengers of summer 1999.

In addition, the U.S. Department of Transportation selected Acadia for an ITS field test. A variety of technologies provided visitors this past summer with enhanced information on the Island Explorer buses, other travel options, and the park facilities.

Eight propane-fueled buses operate Island Explorer transit system in Acadia National Park.

Shuttle on the Cliffs

Zion National Park encompasses 229 square miles of spectacular cliff-and-canyon landscape in southwest Utah. Zion Canyon in the southeast corner of the park is the main visitor destination, accessible by a two-lane, dead-end roadway six miles long. In the early 1970s, the road system could accommodate 1 million visitors per year on the scenic drive and in the limited parking areas. However, meeting the travel needs of the current 2.5 million visitors per year poses a challenge.

A free shuttle bus system started this past summer as the only travel mode for visitors to the Canyon, except for those staying at Zion Lodge (see sidebar, page 7). The shuttle bus system operates from the end of May through early September. The system consists of two loops, one serving the gateway community of Springdale and one serving the Canyon. The Springdale shuttle makes six stops at hotels and other activity centers. The Zion Canyon loop stops at eight locations along the scenic drive. The Zion Canyon visitors center serves as the transfer point between the two routes. Visitors can take the Springdale shuttle to the visitors center or park in the center's lot and ride along the Canyon loop.

Shuttle bus service starts at 6:30 a.m.; the last bus leaves the visitors center at 9:30 p.m. Buses operate on 6 to 8 minute headways during the busiest part of the day, and every 15 to 30 minutes during the early morning and late evening. The fleet consists of 31 propane-powered buses and 21 trailers. Approximately 7,500 passengers rode the shuttles each day early in the season, and the system carried a record 15,400 riders on the Sunday of Memorial Day weekend.

Light Rail to the Grand Canyon

Grand Canyon National Park in northern Arizona attracts 5 million visitors each year. Spectacular scenery makes the park one of the system's best known and most visited. Bus service was introduced as a visitor transportation system in 1974 to relieve traffic congestion on the South Rim's roads. The system carried 3 million riders in 1999, but 1.5 million cars and 30,000 tour buses also entered the park. The many transportation issues associated with the park—specifically the planned light rail transit (LRT) system—have received much publicity.

A general management planning process, from 1991 to 1995, produced a recommendation to build and operate an LRT line for the canyon's South Rim. The 9-mile line will run between a park-and-ride lot with 3,500 spaces in the gateway community of Tusayan and the South Rim visitors facilities. NPS expects to select a concessionaire to finance, design, build, operate, and maintain the LRT and shuttle bus systems in early 2001. The LRT line is scheduled to open in early 2004.

The park's shuttle bus system was expanded this year and will receive additional enhancements when the LRT line is complete. Other improvements complementing the LRT and the shuttle bus network include the new Canyon View Information Plaza and Market Plaza Road. Cooperative efforts with the Arizona Department of Transportation to provide travelers on I-40 with information on roadway conditions and weather also will expand.

When all of these elements are in place, visitor travel in the South Rim will change significantly. Travelers will leave their vehicles outside the park and ride the LRT line to Grand Canyon Village and other South Rim destinations. Shuttle buses, walking, and bicycling will provide access to sites within the park.

These are a few examples of the transportation-related projects under way in national parks. Yosemite National Park and Golden Gate National Recreational Area are the final two demonstration parks, and other projects are in various stages

ZION SHUTTLE

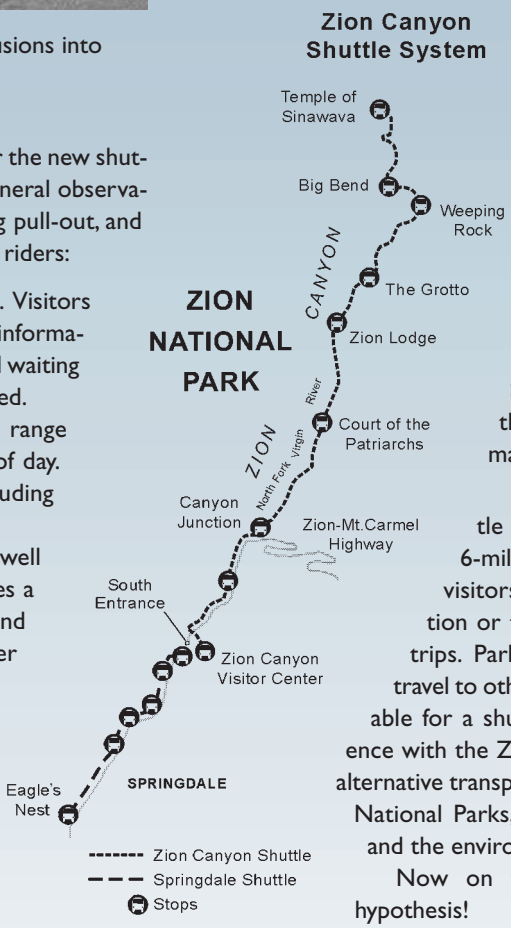
Notes of an Early Rider

Zion Canyon shuttle buses minimize traffic intrusions into scenic views.

A first visit to Zion National Park one week after the new shuttle bus system's startup yielded the following general observations from riding the buses, watching a morning pull-out, and talking with vehicle operators, management, and riders:

- The system is easy to understand and use. Visitors receive a card with a system map and schedule information when paying the entrance fee. The stops and waiting areas for buses in both directions are well marked.
- Service is frequent. Published headways range from 6 to 30 minutes, depending on the time of day. Waits do not exceed 5 minutes, however, including trips during the early morning and evening.
- The vehicles are attractive, clean, and well maintained. The Zion logo on the buses provides a distinctive look and the vehicles are clean inside and out. Operators monitor passengers in the trailer via a closed-circuit television camera.
- The lack of air conditioning and seating may be problems on especially hot days. Despite a temperature in the high 90s, open windows and ceiling air vents keep the ride comfortable. Although the goal is to provide a seat for every passenger, some buses have standees.
- Vehicle operators are knowledgeable and helpful, enthusiastic about their jobs and the service. They readily suggest hiking trails and provide information about the park.
- Passenger reactions from a range of visitors—golden agers, families, and serious hikers—are overwhelmingly favorable. The one negative comment comes from a rider with a backpack full of camera equipment, who notes that driving would have made it easier to store his gear.
- The shuttle buses do not eliminate congestion at the visitors center or at Zion Lodge. The visitors center parking lot is almost full, and automobiles are lined up at the entrance. Encouraging greater use of the Springdale shuttle may alleviate some of the automobile traffic. On one trip, the shuttle had difficulty maneuvering around tour buses parked for overnight guests at Zion Lodge.

Overall, the shuttle bus system works well. The buses provide a quick and easy way to reach Canyon hiking trails and sites, eliminating the hassles of driving on a narrow roadway and finding a parking space near the trailheads. The system also enhances the visitor's experience. The view of the Canyon floor from a trail is more enjoyable with only a bus every 5 to 10 minutes instead of a steady stream of automobiles. Shuttle drivers have noted that the reduced vehicle traffic has made the wildlife more visible.



Zion Canyon is ideal for a shuttle bus system, because the scenic, 6-mile-long roadway is a dead end—visitors must return to Canyon Junction or to Springdale to continue their trips. Parks through which visitors can travel to other destinations may be less suitable for a shuttle system. First-hand experience with the Zion shuttle buses indicates that alternative transportation systems can operate in National Parks, enhancing visitor experiences and the environment.

Now on to other parks to test this hypothesis!